

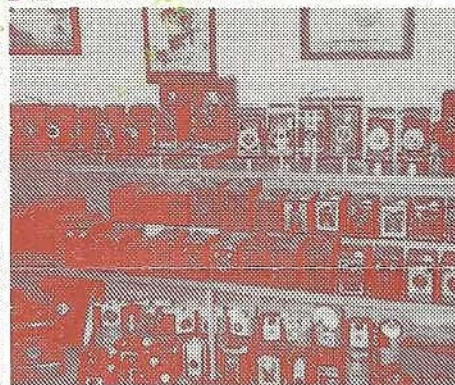
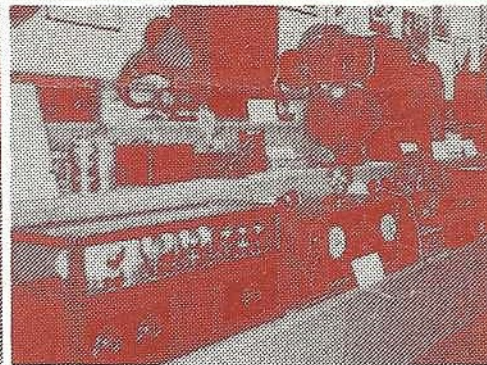
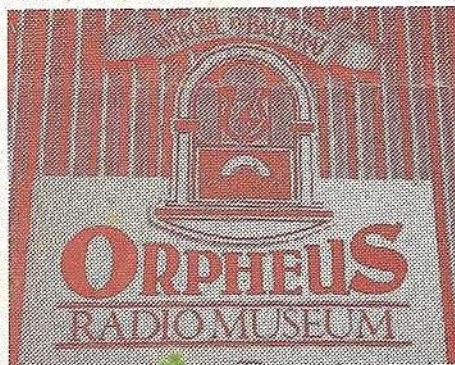
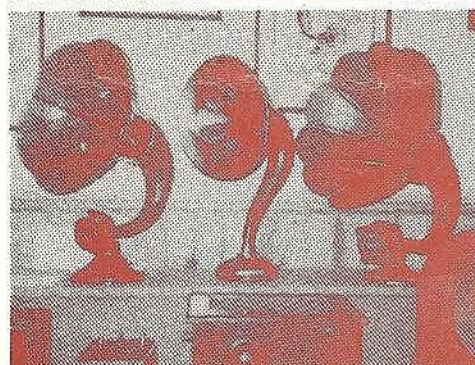
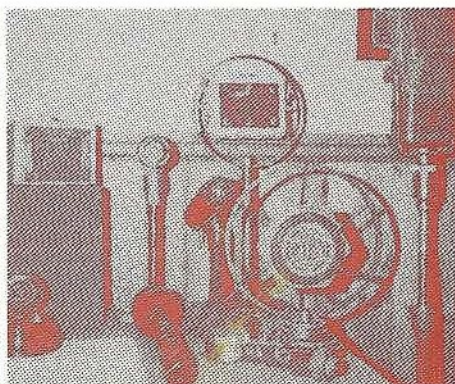
APR 1991

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B.A.R.G. NEWS



© Monthly Newsletter of the
Ballarat Amateur Radio Group

9/04 02

BALLARAT AMATEUR RADIO GROUP INCORPORATED

OFFICERS 1990-1991

EXECUTIVE COMMITTEE

President:	IAN McDONALD	VK3AXH		311317
Imm. Past President:	GORDON CORNELL	VK3KGC	392427	391135
Vice President:	TOM GEORGE	VK3TOM	355662	327234
Secretary:	JIM WRIGHT	VK3CFB	327563	
Treasurer:	HARRY HEKKEMA	VK3KGL	357563	391001
Asst. Secretary:	GEORGE FOWLER	VK3DOK	326863	391954
Publicity Officer:	JOHN HAZELDINE	VK3CFH	391971	391035
Education Officer:	IAN McDONALD	VK3AXH		311317
Net Co-ordinator:	CHARLIE STEWART	VK3DCS	317425	
Technical Officer	DICK ANTOSIEWICZ	VK3AEX	323273	321818
Memb. Representative:	MARY CURNOW	VK3NMC	301927	
	REG CARTER	VK3CAZ		

OFFICERS AND COMMITTEES

Q.S.L. Manager:	JEFF PIGDON	VK3PAP	327041	311211
Awards Manager:	MAURIE BALL	VK3XEX	422245	
Property Officer:	DICK ANTOSIEWICZ	VK3AEX	323273	381818
Hamfest Convenor:	KEVIN HUGHES	VK3WN	355011	
WICEN Committee:	GORDON CORNELL	VK3KGC	392487	391135
	TOM GEORGE	VK3TOM	355662	327234
	GEOFF SMITH	VK3ADB	332112	321719
Technical Committee:	MERV HOOLEY	VK3KAW		311317
	IAN McDONALD	VK3AXH		311317
	DICK FORRESTER	VK3VU	357663	391001
	DAVID McCONNELL	VK3YNB		
Newsletter Editors:	BOB TERRILL	VK3BNC	395317	391001
	HARRY HEKKEMA	VK3KGL	357563	391001

Repeaters: VK3RBA – 146.750 Voice. Mt. Buninyong (ch. 3)
 VK3RBS – 146.900 Voice. Smeaton Hill (ch. 6)
 VK3RPC – 147.575 Packet. Mt. Warrenheip

Club Net: ON 3.5610 Mhz. SSB +/- QRM
 Every Thursday at 8 p.m.

B.A.R.G. meets on the LAST FRIDAY in every month except December at the Ballarat Education Centre, Hopetoun St., Ballarat at 7.30 p.m.

Committee meetings are held at the Education Centre on the Wednesday two weeks prior to the Club meeting at 7.30 p.m. Executive committee members are expected to attend and any club member with business for discussion is welcome.

All correspondence to: The Secretary, BARG Inc., P.O. Box 216E, Ballarat East, 3350.

Applications for Awards to: Maurie Batt, RSD, Rokewood Junction, 3351.



CNR. RING RD. & WESTERN HWY BALLARAT
 (OPEN 10AM - 5 PM 7 DAYS A WEEK)

FEATURES

- GRAMOPHONES • VINTAGE RADIOS • VISITORS PARTICIPATION
- MEMORABILIA • AUDIO DISPLAYS • DEMONSTRATIONS • CRYSTAL SETS

The "Orpheus Radio Museum" is operated by Richard and Sonja Wilson.
 The collection includes their private collection, the 3BA collection and other items on loan to the museum.
 The museum is run with the idea of preserving the history of radio in Australia and making it accessible to the public.
 If anyone has any information or items of interest to the museum, would they please contact, or write to, the "Orpheus Radio Museum" RSD B98, Ballarat 3352. Telephone (053) 34 2513.
 Let the public enjoy your piece of Radio History.

91/04 03

MINUTES OF GENERAL MEETING HELD 22nd MARCH 1991.

MEETING OPENED by President Ian AXH at 7.55pm. 41 members in attendance.

APOLOGIES VK# XEX, YMW, SE, PAP, AEX, NIZ, DS. IBM.

MINUTES of previous meeting as circulated were confirmed. DMK/DCS.

CORRESPONDENCE IN Ballarat Courier. Thanks for assistance at Begonia Fun Run and enclosing donation of \$100.00.

TREASURERS REPORT General a/c \$134.09 VS&L a/c \$2424.15.
Accounts for \$555.00 passed for payment. KGL/ADB.

QSL MANAGER Jeff PAP received 270 inwards cards from Bureau.

CLUB NET Charley DCS reported that numbers on Net had fallen also that no outside stations were calling in.

NEWSLETTER MATERIAL IS URGENTLY NEEDED FOR PUBLICATION IN YOUR NEWSLETTER.

TECHNICAL Merv KAW reports that the Packet Repeater is off air owing to antenna damage.

EDUCATION Ian AXH reports tat 10 students are attending the novice classes and he will be attending a meeting of examination officers at the WIA in April to sort out a few problems.

WICEN Gordon KGC reported on the very successful Fun Run and Car Rally and thanked all participants. He will be calling for volunteers to erect Antennas on Police Station and Art Gallery.

GENERAL BUSINESS

The John Moyle Contest was well supported and the gratitude of the Club goes to Reg CAZ for making the venue available.

Moved by CCB seconded JAT that Gordon investigate the prospects of using the Central Bowling Club premises as Club rooms. carried.

It was resolved that the Club will supply communications for the Scouts International Jamboree at Victoria Park in Jan. 1992.

MEETING CLOSED at 8.50pm and after a coffee break Ian AXH gave a talk on Marine Sattelites and communications.

73s Jim CFB.

NEXT BARG MEETING Friday 26th April. 7.30pm Education Centre.

COMMITTEE MEETING Monday 27th May. 7.30pm Education Centre.

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From now until October you can contact Cliff on the bands below.

pm. 3.610, 18.130 am. 28.55 during the day also on freq's 7.095, 21.195 Travellers Net 14.116 0300 UTC.

Listen for Cliff from all States during the next 6 months.

73's from Helen and Cliff VK3CCB.

91/04 04

BEGONIA CAR RALLY

The Begonia Car Rally is a car rally run by the Ballarat Light Car Club and is part of the Victorian Rally Championship for 1991. The rally is under the control of CAMS (Confederation of Australian Motor Sports).

This year the organizer is George Davidson, a chemistry teacher at Ballarat East Secondary College.

WICEN Victoria was contacted in February 91, who then tasked Region "M" to provide the radio safety & scoring net.

The rally was to be conducted over 18 stages, starting at the Bridge Mall, proceeding to Victoria Park for a short circuit, then onto the forest areas south of Ballarat in the Scarsdale area & then back to the Ballarat Airport via the Monza Park area.

Fifty three cars started in the event, but only thirty four cars finished due to mechanical breakdown and/or accidents such as rollovers etc.

The Operators taking part were VK3s BNC(Bob), DMK(Tom), CAZ(Reg) AAI(Murray), ASU(des), KQF(Fred), PAP(Geoff) & KGC(Gordon) The first operator on site was Geoff at the Scarsdale RV at 0745 and the net closed at 1729 with Gordon & Fred.

The radio control took place as two parts, Part 1 was at Victoria Park conducted on 146.500M (simplex) by Bob, Reg & Tom giving information to the broadcast point & keeping check on cars in case of accidents, (of which there were a few near misses).

The second part used the other operators out in the bush, again keeping a safety net watch but mainly passing times of competitors. This involved giving a car number & an elapsed time for all the cars (53 to start).

The event went very well, with few problems. One of note was where the field director in his hot car left Geoff in his van behind in a cloud of dust in the bush. When Geoff could not find him (because the director was back at the Airport Geoff notified control & was allowed to return home.

My thanks go to those operators who took part in the day & those who volunteered their service but were not required. Also my sincere thanks go to the people who use VK3RBA for normal working, their tolerance of our use of the repeater for most of the day is greatly appreciated.

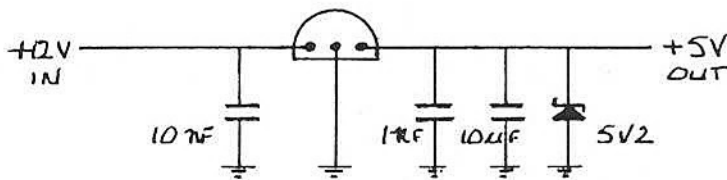
These activations are good training for WICEN and members should avail themselves of the opportunities as they arise.

Gordon VK3KGC
WICEN Co-ordinator

91/04 05

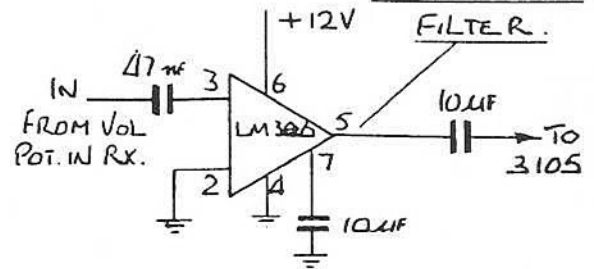
REGULATED +5V SUPPLY FOR 3105

78L05 (HAS INT. O/L PROT'N.)



RF BYPASS IMPORTANT WITH REGULATORS.

STABLE AT THIS GAIN WITHOUT FILTER.



ALTERNATIVE INTERFACE. GAIN X15

FIG.2 A 5 VOLT REGULATED SUPPLY INCLUDED WITH THE PREAMPLIFIER.

AFTER CONTEMPLATING THESE DEVELOPMENTS, IT OCCURRED TO ME THAT THE LM386 1 WATT OPAMP. WOULD BE A GOOD ALTERNATIVE TO THE JFET/DARLINGTON AND PRACTICALLY THE SAME THING, WITH AN INCREASE IN GAIN TO CATER FOR A WIDE RANGE OF APPLICATIONS. A 16 PIN DIL SOCKET HAD BEEN MOUNTED ON THE VERO-BOARD FOR A DUAL OR QUAD OPAMP. BUFFER IF REQUIRED. (SEE BARG RE GERMAN MODEM USING THIS.) AN LM386 TRIED HERE, WITHOUT PIN 1-8 FEEDBACK, HAD A GAIN OF 15X, SO THIS IS THE WAY TO GO FOR AUDIO SOURCES <100 MV P-P.

I FOUND THE 3105 MODEM WORKED FIRST TIME, WITH PIN 7 (RECEIVE BIAS VOLTAGE) SET AT +2.6 VOLT AND WONDER IF THE 'CRITICAL ADJUSTMENT' AS REPORTED, IS DUE TO A DEFICIENCY AT THE AUDIO INPUT. I USED A 10K RESISTOR ACROSS THE DIODES: THE DIODES ARE LOW IMPEDANCE ANYWAY AND REMEMBER THE ORIGINAL USE IN TELEPHONE CIRCUITS. ALSO WORTH REMEMBERING IS THAT RESISTOR/CAPACITOR COMBINATIONS CAN RESULT IN PHASE AND AMPLITUDE DISTORTION AT THE TWO MARK/SPACE FREQUENCIES. THIS BECOMES MORE IMPORTANT THE HIGHER WE GO IN BIT RATE AND AS IN TV VIDEO, GROUP DELAY BECOMES A PROBLEM. I SUSPECT THAT SOME PACKET OPERATORS WHO HAVE HAD TROUBLE RECEIVING PACKET, MAY NOT BE PROVIDING THEIR MODEM WITH THE CORRECT LEVEL AND PHASE COHERENT TONES FROM THEIR RADIO.

MY THANKS GO TO MAX AND HARRY, ALSO TO BOB WHO I USED TO KNOW AS VK3ZFT SOME YEARS AGO ON 2 AM., AND TO BARG AND THE BALLARAT PACKETEERS WHO MAKE IT FUN TO BE AN AMATEUR.

73, DICK. VK3ABK.

5/

9/04 06

A PACKET MODEM PREAMPLIFIER

DE VK3ABK

AFTER STARTING ON PACKET WITH A 7910 MODEM, I WANTED SOMETHING SMALLER TO FIT INSIDE MY KENWOOD TR 2200 HANDBAG TRANCEIVER FOR PORTABLE OPERATION.

THANKS TO MAX VK3YMW AND HARRY VK3KGL, I AQUIRED A 3105 AND N4PLK PC BOARD WHICH FITTED NICELY (WHEN THE CONNECTOR PADS WERE CUT OFF) INTO THE SPACE WHERE 10 NICADS ORIGINALLY RESIDED.

AS I LIKE TO KNOW ABOUT WHAT I AM USING, MAX KINDLY GOT ME A COPY OF DATA ON THE 3105 FROM BOB VK3BNC, SO THAT THE INPUT PARAMETERS COULD BE SET CORRECTLY. (A KIND OF INSURANCE POLICY AGAINST ECONOMIC AND PHYSICAL COLLAPSE).

I HAVE TAKEN AUDIO FROM THE TOP OF THE VOLUME CONTROL IN MY TRANCEIVER TO GET CONSTANT LEVEL AND HAVE SEPARATE USE OF THE SPEAKER OUTPUT, OR SILENT RUNNING AS DESIRED. MY FIRST NEED THEREFORE, WAS TO LIFT THE AUDIO VOLTAGE, FROM ABOUT 150 VOLT P-P. THE 3105 DATA SHEET STATES 300 MV NOM. P-P AND 780 MV P-P MAX., FOR ANALOG AUDIO INPUT TO PIN 4.

AN AMPLIFIER USING A JFET INPUT STAGE WITH A GAIN OF 4 TO 5 WAS NEEDED, FOLLOWED BY AN EMITTER FOLLOWER TO GET TO THE LOW IMPEDANCE (CALCULATED) OF THE 3105 INPUT. AFTER ALL THE MAIN USE OF THIS CHIP SEEMS TO BE THE LOW IMPEDANCE OF TELEPHONE CIRCUITS. FIGURE 1 SHOWS THE DEVELOPMENT OF THIS FIRST AMPLIFIER. THE USUAL N CHANNEL JFET OPERATES IN THE DEPLETION MODE AND SO CONDUCTS EVEN WHEN THE GATE-SOURCE VOLTAGE IS ZERO AND VARIES OVER SEVERAL MILLIAMP BETWEEN SAMPLES. THIS MAKES REPRODUCTION OF A SIMILAR DIRECTLY COUPLED CURRENT AMPLIFIER UNCERTAIN. CONSEQUENTLY THE CAPACITIVELY COUPLED VERSION AND THE DARLINGTON OUTPUT STAGE TO PROVIDE EVEN LOWER OUTPUT IMPEDANCE. THIS MEANS LESS EFFECT FROM LOADING BY ANY MODEM INPUT.

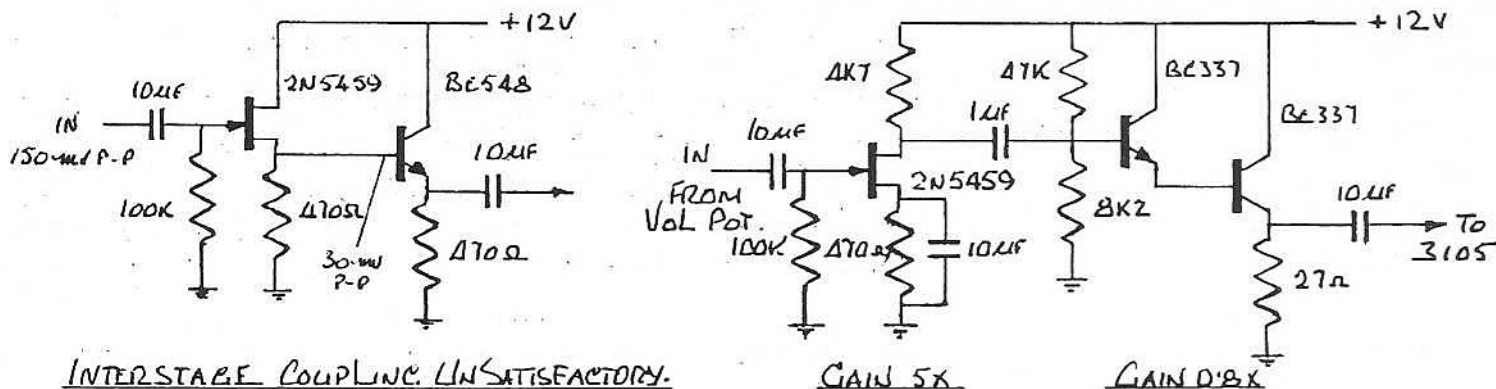


FIG.1 LOW PHASE SHIFT AND DISTORTION INTERFACING CIRCUITS SHOULD BE USED ----- IN DATA PROCESSING. (GROUP DELAY).

THE 3105 MODEM WORKED WELL. INITIALLY IT WAS CONNECTED TO MY YAESU FT 227R TRANCEIVER IN PLACE OF THE 7910 MODEM. THE VOLTAGE AT PIN 4 (3105) WAS 500 MV P-P.. ABOUT THE SAME USING THE TR 2200.

I MOUNTED THE AMPLIFIER ON A PIECE OF VEROBOARD, HALF THE SIZE OF THE N4PLK PCB. (SEE REPRINT, TCM MODEM FOR THE DIGICOM 64. IN BARG NEWS, CIRCA 1989) OR 73 MAG., FEB 1989. (PCB COR. MARCH 1989). THE VEROBOARD IS FIXED BELOW THE 3105 BOARD TO MAKE THE WHOLE A SLIDING FIT IN THE TR 2200 BATTERY COMPARTMENT. ALSO ON THE HALFSIZE BOARD IS A FILTERED +5 VOLT REGULATOR WITH A ZENER SAFETY NET, TO SUPPLY THE VDD AT THE 3105. SEE FIG.2.

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CHRONOLOGY OF GUGLIELMO MARCONI

91/0407

INTERNATIONAL MARCONI DAY

APRIL 27TH, 1991

- 1874 - BORN IN BOLOGNA, ITALY ON 25 APRIL OF ITALIAN AND IRISH PARENTS
- 1894 - FIRST EXPERIMENTS WITH HERTZIAN WAVES
- 1895 - TRANSMITS WIRELESS SIGNALS OVER ONE MILE
- 1896 - MOVES TO LONDON, ENGLAND
FIRST FORMAL DEMONSTRATION OF WIRELESS GIVEN TO THE BRITISH POST OFFICE....GRANTED WORLDS FIRST RADIO PATENT.
- 1897 - REGISTERS WIRELESS TELEGRAPH AND SIGNAL CO., LTD
- 1898 - FIRST PRIVATE WIRELESS...INSTALLED FOR QUEEN VICTORIA
FIRST COMMERCIAL MESSAGE...SENT FOR LORD KELVIN
FIRST WIRELESS JOURNALISM...KINGSTOWN REGATTA
- 1899 - ENGLISH CHANNEL EXPERIMENTS PROVE CURVATURE OF EARTH IS NOT AN OBSTACLE TO WIRELESS TRANSMISSION
SAILS TO NEW YORK TO REPORT AMERICA'S CUP
GRANTED PATENT NO. 7777 FOR TUNING APPARATUS
- 1901 - 12 DECEMBER, FIRST TRANSATLANTIC SIGNAL SENT FROM POLDHU, CORNWALL TO ST. JOHN'S, NEWFOUNDLAND
- 1902 - S.S. PHILADELPHIA TESTS CONFIRM TRANSATLANTIC SIGNAL AND REVEAL NIGHT RECEPTION TO BE MUCH STRONGER THAN DAY
INVENTS MAGNETIC DETECTOR ("MAGGIE")
15 DECEMBER, FIRST TRANSATLANTIC MESSAGE SENT FROM GLACE BAY, NOVA SCOTIA TO POLDHU, CORNWALL
- 1903 - 18 JANUARY, FIRST TWO WAY TRANSATLANTIC BETWEEN POLDHU, CORNWALL AND CAPE COD, MASS. U.S.A.
- 1906 - INVENTS DISC DISCHARGER
- 1907 - COMMERCIAL TRANSATLANTIC WIRELESS SERVICE INAUGURATED BETWEEN GLACE BAY, NOVA SCOTIA AND CLIFDEN, IRELAND
- 1909 - AWARDED THE NOBEL PRIZE FOR PHYSICS
- 1912 - TITANIC DISASTER
- 1919 - ACQUIRES 700 TON STEAM YACHT "ELETTRA" FOR RADIO EXPERIMENTS
- 1920 - SUCESSFUL DEMONSTRATION OF UNMANNED AUTO-ALARM FOR SHIPS
- 1923 - BIRTH OF SHORT-WAVE BEAM SYSTEM
- 1927 - OPENING OF BEAM SYSTEM LINKS BRITISH EMPIRE
- 1928 - APPOINTED CHAIRMAN OF THE NATIONAL RESEARCH COUNCIL OF ITALY
- 1930 - LIGHTING OF SYDNEY, AUSTRALIA TOWN HALL FROM SHIP "ELETTRA"
- 1931 - LIGHTING OF STATUE OF CHRIST IN RIO DE JANEIRO FROM ROME
- 1932 - INSTALLS ULTRA-HIGH-FREQUENCY RADIO TELEPHONE LINK FOR POPE PIUS XI
- 1937 - DIES IN ROME ON 20 JULY AFTER A SERIES OF HEART ATTACKS
RADIO TRANSMITTERS ALL OVER THE WORLD CLOSED DOWN FOR TWO MINUTES...THE ONLY TIME THIS HAS EVER BEEN DONE FOR ANYONE

7/5

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CORNISH RADIO AMATEUR CLUB
INTERNATIONAL MARCONI DAY
APRIL 27th , 1991

AWARD INFORMATION

This year there will be 14 special event stations and to qualify for the MARCONI AWARD it will be necessary to work any 10 of these stations.

QSL cards can be exchanged via the bureaux, or if preferred then directly (if possible with stamps or a small donation towards postage costs) to;

C.R.A.C. P.O.Box 100. TRURO CORNWALL TR1 1RX. UNITED KINGDOM.

All official award claims must be made via the above P.O. Box and accompanied by either \$5(U.S), or £2.00(U.K), or 10 IRCs. The official award is for full two way working only, but there is an award for Short Wave Listeners.

Most of the stations will be operating all modes including Digital Modes.

PARTICIPATING STATIONS

GB4IMD - will represent Poldhu, Cornwall, England station from which the first transatlantic radio transmissions were successfully completed with Canada in 1901 and the U.S.A in 1903. GB4IMD will be operating from Perranwell, Cornwall which lies a few miles from the original Marconi transmitter site.

ZS6IMD - is representing the South African influence of Marconi on world communications to the African continent.

K1VV/IMD - will represent Marconi's station "CC" in South Wellfleet, Mass. on Cape Cod where the first two way radio transmission was received between the United States and Europe on Jan 18th, 1903.

VE1IMD - will represent Marconi's Glace Bay, Nova Scotia station from where the first transatlantic service was opened on 15th December 1902 with Poldhu, Cornwall.

IY4FGM - will represent Marconi's home at his fathers country house, The Villa Griffone at Pontecchio, Italy where at the age of 21, Marconi performed wireless experiments in 1895.

GB2IMD - will represent a Marconi Experimental Site near Rathlin Island, Northern Ireland.

VO1IMD - will represent Marconi's St. John's, Newfoundland station where the first transatlantic radio signals were received on 12th December 1901.

GB2MDI - is located on Salisbury Plain, here Marconi demonstrated his radio equipment along with balloon antennas to the British Army.

GB0IMD - represents a station at Niton on the Isle of Wight, where a record was set over a distance of 300kms with the Poldhu station, 23rd January 1901.

DA0IMD - will represent Borkum Lightship and Borkum Island of the north coast of West Germany from which the first ever "MARCONIGRAM" was sent on 28th February 1890.

GB4MDI - represents a station on Flatholm Island in the Bristol Channel of the Wales coast where Marconi performed one of the first radio transmissions across water with a station at Lavernock Point 13th May 1897.

IYOTCI - is located in Civitavecchia

IY1TTM - will transmit from Tigullio Tower at Sestri Levante on the Italian Riviera, near Genoa.

EI2IMD - will transmit from Crookhaven in the Irish Republic where in June 1901 Marconi received signals from Poldhu, a distance of 365 kilometres. Thus proving that radiated signals followed the curvature of the earth.

Information received from Packet BBS and Practical Wireless, April 1991.

TOM....VK3DMK....

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